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 DEPARTMENT OF NATURAL RESOURCES
 DIVISION OF OIL, GAS AND MINING

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September 4, 2002

TO: Internal File

THRU: Mike Suflita, Senior Reclamation Specialist/Team Lead *ms*

FROM: *W* Priscilla W. Burton, Senior Reclamation Specialist/Soils

RE: Appendix 3-P: Wild Horse Ridge Tank Seam Pad and Access Roads, CO-OP Mining, Bear Canyon Mine, C015025-AM02B-1

SUMMARY:

On February 19, 2002, the Division received a permit amendment for development of the No 4 Mine access road (¼ mile in length) and pad area (2.22 acres) with three portals into the Tank Seam on Wild Horse Ridge. The useful life of these portals is estimated to be eighteen years. Tank seam coal (#4 Mine) will be dropped by chute into the Blind Canyon seam (#3 Mine) and transported to the tipple by the overland conveyor. Portal pad development includes the construction of a retaining wall to widen the pad area and movement of approximately 11,000 cubic yards of soil into place.

A total of 3.11 acres will be added to the Bear Canyon Mine disturbed area for a total of 40.28 acres disturbed.

The first review of this submittal was dated April 29, 2002. This memo reviews the second submittal, received June 18, 2002 and information received via email on September 5 and 6, 2002.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

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Analysis:

The information has been clearly and precisely presented in an electronic submittal with all previously noted errors corrected.

Findings:

The presentation of the information meets the requirements of the Regulations.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

URS Corporation; 756 East Winchester Street, Suite 400, Salt Lake City, conducted the slope stability analyses for the Tank Seam expansion at Wild Horse Ridge (Attachment B of Appendix 3P).

Mr. Dan Larsen of EIS Environmental & Engineering Consulting, 31 North Main St., Helper Utah conducted the Wild Horse Ridge Tank Seam Soil Reserves Investigation and Assessment (Appendix 8-G).

Findings:

The information provided is adequate for reporting of Technical Data.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

Section 3.5.8.1 of the MRP indicates that samples will be taken in new sections during future development where indicated on Plate 3-4. Samples will be analyzed according to Table 3K-1 and results will be included in Appendix 6-C.

Sampling locations RFM 1, 2 and 3 are in the #3 Blind Canyon seam U 024316 as indicated on Plate 3-4a.pdf. Samples RFM-1 was taken recently and will be added to Appendix 6C (personal communication with Mark Reynolds on September 5, 2002). Samples RFM 2 and

3 will be taken in 2016 and 2021, respectively.

A previous sample site in the Hiawatha Seam on Wild Horse Ridge (Plate 3-4B, 2001 Annual Report) was also designated RFM -3, but this site is in an area mined in 1994.

Sample site RFM-4 is in the Tank Seam in Mine #1 and was taken in 1995 (Email communication with Mark Reynolds on September 6, 2002). Information from this sample is found in Appendix 6C pages 23-25.

Sample sites RFM-5, 6, and 7 are in the Tank Seam, U-38727 lease area (Plate 3-4c.pdf). Sample RFM-5 is in the main entry and will be taken in 2003. Sample RFM-6 will be taken in 2008. Sample RFM-7 will be taken in 2020.

Data obtained from borehole analysis in 1982 of both the Tank Seam and the Blind Canyon Seam roof/floor and partings indicates that waste rock from the Blind Canyon Seam has little if any calcium carbonate content and will be acid-forming.

Section 6.5.4.1 (page 6-21) of the submittal indicates that the Permittee will again analyze the #3 Blind Canyon Seam and the #4 Tank Seam for acid/toxic-forming potential as soon as the mine progresses to the sample points shown on Plates 3-4a & b. As mentioned previously, the #3 Blind Canyon Seam has recently been sampled at RFM-1.

Findings:

The information provided meets the requirements of the Regulations for geologic analysis. The Division will soon be in receipt of roof and floor and midseam analysis from the Blind Canyon Seam (RFM-1).

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

A soil survey for the Tank Seam area expansion on Wild Horse Ridge was conducted in October 2001 (Appendix 8G). Soils of the portal were classified as loamy-skeletal, mixed, Typic Calciborolls (Guben) and loamy-skeletal, mixed Typic Haploborolls (Datino) on the basis of two pits TSP-1 and TSP-2. These classifications were supported by eleven hand dug holes (N11 - N21). Ten hand dug holes (N1 - N10) were used to verify the Guben Pathead soils and Doney-Cabba-Podo soils along the access road. Locations of the pits and shallow excavations are shown on the Soils Map that accompanies Appendix 8G.

Samples of the A and B horizons were collected and analyzed by Inter-Mountain Laboratory, Farmington, New Mexico. Pit TSP-2 is located in Datino soil adjacent to the road

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Samples of the A and B horizons were collected and analyzed by Inter-Mountain Laboratory, Farmington, New Mexico. Pit TSP-2 is located in Datino soil adjacent to the road along the second hairpin turn above the Blind Canyon Seam portals. TSP-2 was sampled down to 20 inches (sample number P5).

Pit TSP-1 was located in Guben soil alongside the road just below the third hairpin turn above the Blind Canyon Seam portals. TSP-1 was sampled down to 40 inches (samples numbered P1 – 3). Calcic horizons were identified in the field at 9 inches and 24 inches and verified by analysis.

A composite of soil from Notesite 21 at the pad area was combined with the surface soils from TSP-1 and labeled P4.

The nutrient status of the top eight inches of soil at TSP-1 was 5.0 mg/kg Nitrate-N, 3.0 mg/Kg Phosphorous, and 170 mg/Kg Potassium. The nutrient status of the top eight inches of soils at TSP-2 were not sampled separately, but were added to a composite of soils in the pad area (P4). The P4 sample was less fertile than the top eight inches of TSP-1 with 1.0 mg/kg Nitrate-N, 3.2 mg/Kg Phosphorous, and 310 mg/Kg Potassium in the upper seven inches. (This analytical result does not reflect the quality of the soil in TSP-2.) In both pits, SAR values were 0.2 or less and Electrical Conductivity was under 0.9 mmhos/cm.

The TSP-2 samples are noticeably lower in carbonates than those of TSP-1. Neutralization Potential of the calcic horizon in TSP-1 was over 300 t/kt compared with less than 10 t/kt at the 10 inch depth in TSP-2. (The calcic horizon was not indurated and did not restrict root growth.).

The field notes support the salvage of eight inches of topsoil (A horizon) along the road and at locations of pad development and switchback widening. Field notes and the NRCS soil description indicate that the A and B horizon for the Guben and Datino soils could be salvaged to a depth of sixteen inches.

Findings:

The information provided is adequate for the Soils Resource requirements of the Regulations.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Analysis:

Removal and Storage

Table 3.3-1 Surface Disturbance Summary indicates that the No.4 Mine Access Road will be 2.74 acres (2000 feet long, page 3D-7A) and the Wild Horse Ridge Portal Pad area will be 0.55 acres. The pad will be supported by a retaining wall (page 3A-7). Roads will be made of subsoils and/or imported gravels. Road base analyses are presented in Appendix 8-E.

Development of the site will begin from the Blind Canyon seam. Topsoil will be removed from road and pad cuts as noted on page 8G-7 of App 8-G to a depth between 6 and 20 inches. Greater topsoil salvage depth is expected where pockets of a brown sandy loam BW horizon were noted along the northeast edge of the portal site.

Field notes and the NRCS soil description in Appendix 8G indicate that the A and B horizons for the Guben and Datino soils could be salvaged to a depth of sixteen inches. Since the mine is operating with a deficit of salvaged topsoil, expansion at Wild Horse Ridge presents an opportunity to salvage and store soils that could be utilized in reclamation of the Tipple yard.

Approximately 1,300 cu yds will be salvaged from reclamation area TS17 (page 8-35 and Table 3P-1 and Table 8.9-5 Summary Table). Topsoil will be stored in the Wild Horse Ridge Tank Seam Topsoil Stockpile as shown on Plate 2-4G and Plate 8-5G. Page 7K-11 indicates the 0.31 acre topsoil storage area will be protected from road drainage by a berm. Details of stockpile construction are shown in Appendix 3-P. The plan indicates that when the capacity of the topsoil stockpile is reached, excess topsoil will be hauled down to the Wild Horse Ridge topsoil stockpile and as a last resort, the potential additional topsoil storage site at Wild Horse Ridge will be utilized.

Table 8.3-2 Soil Unit Acreages Within the Disturbed Area indicates that approximately 3 acres of ground will have topsoil salvaged. Although page 8-43 states that there will be no construction or soil movement in the 0.76 acres of TS-16, this is contradicted by information in the cover letter attached to this submittal indicating that the road will be widened. Tables 8.3-2, 8.9-1 and 8.11-1 all include the additional acreage from TS 16.

Subsoils will be compacted on the outside of the two switchbacks shown on Plate 2-4G to allow the road to widen in these points.

Findings:

The information provided meets the requirements of the regulations for describing topsoil and subsoil handling operations.

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SPOIL AND WASTE MATERIALS

Regulatory Reference: 30 CFR Sec. 701.5, 784.19, 784.25, 817.71, 817.72, 817.73, 817.74, 817.81, 817.83, 817.84, 817.87, 817.89; R645-100-200, -301-210, -301-211, -301-212, -301-412, -301-512, -301-513, -301-514, -301-521, -301-526, -301-528, -301-535, -301-536, -301-542, -301-553, -301-745, -301-746, -301-747.

Analysis:

Coal mine waste

Section 3.5.8 of the MRP indicates that 150 cu yds of coal mine waste may be temporarily stored (15 days) on the main storage pad shown on Plate 2-4C. Drainage from this temporary location goes to Sediment Pond A.

Final storage of coal mine waste is permitted at the Hiawatha (C/007/011) in Slurry Pond 5A. Prior to shipping to Hiawatha, material will be tested for acid/toxic properties according to Table 3K-1.

Findings:

The information provided is adequate with regard to spoil and waste disposal requirements of the Regulations.

RECLAMATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-240.

Analysis:

Redistribution

Cut and Fill calculations are shown in Table 3P-1 on page 3P-4. Calculations were developed from Plates 2-4G, Plate 3-2G and 3-7G using AutoCad Quicksurf 3-D modeling software. Resulting cross-sections are found in Attachment A (Note: the scale changes with each cross-section). Plate 3-7G shows the locations of the cross-sections.

Table 8.9-1 Reclamation Area Summary and Table 8.3-2 Soil Unit Acreages Within the Disturbed Area includes areas TS-16 (0.89 acres) and TS-17 (2.22 acres) for the Wild Horse Ridge Tank Seam, for a total of 3.11 additional acres. Of these acres, 2.74 will have topsoil removed (Table 8.3-2) and 1.74 will be recontoured (Table 8.9-1). The difference is accounted for by the existing access road which will remain after reclamation.

Eight inches of topsoil will be replaced over the regraded area (page 3P-6).

Two samples will be drawn from the re-graded subsoils of the WHR Tank Seam Upper Pad to be tested for suitability.

Findings:

The information provided meets the requirements of the Regulations for reclamation topsoil and subsoil.

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 784.14, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-301-512, -301-513, -301-514, -301-515, -301-532, -301-533, -301-542, -301-723, -301-724, -301-725, -301-726, -301-728, -301-729, -301-731, -301-733, -301-742, -301-743, -301-750, -301-751, -301-760, -301-761.

Analysis:

Acid and toxic-forming materials

During final reclamation, subsoils will be tested with the frequency outlined in Table 8.11-1 for acid/toxic parameters. The MRP describes final placement of coal mine waste in Section 3.5.8.

Findings:

The information provided is adequate to protect the hydrologic balance as required by the Regulations.

STABILIZATION OF SURFACE AREAS

Regulatory Reference: 30 CFR Sec. 817.95; R645-301-244.

Analysis:

A slope stability analysis conducted by URS Corporation, Salt Lake City, Utah, is provided in Attachment B. Subsoil will be compacted in 12 inch lifts. During operations, exposed slopes will be covered with erosion control matting as described in Appendix 7-K (page 3P-5). During reclamation, slopes will be roughened with pocking and erosion control matting will be used as described in Section 3.6.11 (page 7K-23).

Findings:

The information provided is adequate for the stabilization requirements of the Regulations.

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RECOMMENDATION:

The plan can be approved with the understanding that the Division will shortly be in receipt of the sample analysis from the Blind Canyon Seam (RFM-1).

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